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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,239	03/06/2000	Ju Cheon Yeo	8733.20093	7949

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EXAMINER

KUMAR, SRILAKSHMI K

ART UNIT

PAPER NUMBER

2675

DATE MAILED: 12/20/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/515,239

Applicant(s)

YEO ET AL.

Examiner

Srilakshmi K. Kumar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 17-20 are objected to because of the following informalities: Claim 17 is shown to be dependent upon claim 10 which in turn is dependent upon claim 7. It is shown that the limitations of claims 7 and 17 are exactly the same, thus claim 17 is objected to, as it is redundant. Claims 18-20 are objected to as they depend upon claim 17. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cairns et al. (GB 2,333,174 A) and in further view of Fujiyoshi et al (US 6,323,871 B1).

As to independent claims 1 and 11, Cairns et al disclose a liquid crystal device and a method for driving a liquid crystal display device, having a demultiplexer unit (Fig. 8, item 25) connected between a data driving circuit (20) and a plurality of data lines on a liquid crystal panel, the demultiplexer unit (25) distributing color data signals (3) from any one of the output terminals of the data driving circuit to the plurality of data lines on the liquid crystal panel (Fig. 8), the method comprising, classifying color data signals to be applied to the demultiplexer unit from the data driver circuit by colors (Fig. 8, item 3);

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Cairns et al do not teach consecutively providing the color data signals having a same color to the data lines by the demultiplexer unit before applying a different color. Fujiyoshi et al disclose in Figs. 3, 5 and 7, and in col. 8, lines 14-45, where color data signals having a same color are consecutively provided to the data lines before applying a different color. It would have been obvious to one of ordinary skill in the art to incorporate the feature of Fujiyoshi into that of Cairns as they both teach a method of driving liquid crystal displays. The system of Fujiyoshi is advantageous, as taught in col. 3, lines 12-35, as it reduces the number of scanning lines, thus reducing power consumption and expense.

As to claims 2 and 12, limitations of claims 1 and 10, and further comprising wherein the color data signals are applied to the data lines on the liquid crystal panel in a combination of sequences of color data signals of red, green and blue (Fig. 8, item 3 and pg 14, lines 9-12).

As to claims 3 and 13, limitations of claims 2 and 12, and further comprising wherein the color data signals are applied to the data lines on the liquid crystal panel in a sequence of red, green and blue signals (Fig. 8, item 3 and pg 14, lines 9-12).

As to claims 4, 5, 14 and 15, limitations of claims 2 and 12, and further comprising wherein the color data signals are applied to the data lines on the liquid crystal panel in a sequence of green, blue and red signals or blue, red and green, (pg. 14, lines 9-12). Cairns and Fujiyoshi do not state this explicit sequence. Further Fujiyoshi et al in col. 6, lines 60-63, state the RGB arrangement of the color filter is made as indicated in Fig. 3, but RGB arrangement is not limited to that in this mode, therefore it is obvious to one of ordinary skill in the art that the sequence of the color data signals can be changed as it would not make much difference of the order of the sequence of the signals.

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As to claims 6 and 16, limitations of claims 1 and 10, and further comprising wherein the classifying step includes arranging the color data signals according to a sequence of dot inversion system (Fujiyoshi, Fig. 4) where each contiguous pixel of liquid crystal panel has a reverse polarity. Although Cairns and Fujiyoshi do not disclose where each contiguous pixel of the liquid crystal panel has a reverse polarity, it would have been obvious to one of ordinary skill in the art that this feature could have been present as this feature enables higher resolution and picture quality.

As to claims 7 and 17, limitations of claims 1 and 10, and further comprising wherein the demultiplexer unit includes a plurality of demultiplexers as shown in Fig. 8, item 25.

As to claims 8, 10, 18 and 20, limitations of claims 7 and 17, and further comprising wherein each of the plurality of the demultiplexers is connected to at least five or in multiple of six data lines on the liquid crystal panel. Though Cairns, in Fig. 7, shows three data lines (35) connected to the demultiplexer, it would have been obvious to one of ordinary skill in the art to be able to increase the data lines to five or six as this would enable higher resolution and increased picture quality in the liquid crystal display.

As to claims 9 and 19, limitations of claims 7 and 17, and further comprising wherein each of the plurality of demultiplexers is connected to an odd number of data lines as shown in Fig. 8.

Conclusion

Any response to this action should be mailed to:

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Or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 308-6606 (for informal or draft communications, please label

"PROPOSED" or DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive,

Arlington, VA, Sixth Floor (Receptionist)


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 703 306 5575.

The examiner can normally be reached on 8:00 am to 5:30 pm alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven J. Saras can be reached on 703 305 9720. The fax phone numbers for the organization where this application or proceeding is assigned are 703 306-0377 for regular communications and 703 308 9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305 4700.

SKK
December 16, 2001

 Srilakshmi K. Kumar
Examiner
Art Unit 2675
STEVEN SARAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600